REMARKS

By way of the present response, claims 1, 11, 19 and 30 have been amended and new claims 31-35 have been added. The amendment to claim 1 addresses a minor informality pointed out by the Examiner on page 3 of the Office Action. The amendments to claims 11, 19 and 30 are discussed below. Claims 1-35 currently are pending. Applicants respectfully request reconsideration and withdrawal of the rejections of the claims.

The Ikeda et al. and Arai et al. Patents

In the most recent Office Action, the rejection of claims 1, 5 and 27 was maintained and claims 6-14 and 18-22 were newly rejected under 35 U.S.C. §103, as allegedly being obvious over the Ikeda et al. and Arai et al. patents. This rejection is respectfully traversed.

MPEP §2143 instructs that to establish a *prima facie* case of obviousness, the Office must meet three basic criteria. First, the Office must demonstrate that some suggestion or motivation exists, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references (or references when combined) must teach or suggest all the claim limitations. While reasonable expectation of successful combination would be absent, it should be sufficient to show that the rejection is improper at least because the proposed combination of the Ikeda et al. and Arai et al. patents fails to teach or suggest each and every feature set forth in independent claims 1, 6, 11, 19 and 22. In addition, the Examiner has not provided evidence from these disparate documents to substantiate any suggestion for the proposed modifications of the Ikeda et al. system. The points will now be explained in detail with respect to the representative claims.

Independent Claim 1

Independent claim 1 is directed to a digital camera and recites that the camera comprises, among other features, an image sensing unit and a camera body. The camera body includes a detector for detecting a condition of a proper connection of the image sensing unit to the camera body, and a power supply controller for selectively controlling power supply in the camera body. Claim 1 further recites that the selection of the power supply control is determined in accordance with a result of the detection. In other words, determination of how power supply selectively controlled is made in correspondence to *a detected condition of a proper, or correct connection of the image sensing unit to the camera body*.

In setting forth the rejection, the Examiner refers to column 12, lines 25-34 of the Ikeda et al. patent and asserts that the image sensing unit 100 and a built-in expansion board 140 of a computer (column 6, lines 18-19) can be respectively considered an image sensing unit and a camera body of a digital camera. With respect to the claimed detector for detecting a condition of a proper connection of the image sensing unit to the camera body, the Examiner asserts that the signal processor controller 164 of Ikeda et al. operates to detect a condition of a proper connection. It is respectfully submitted, however, that signal processing controller 164 does not operate to detect *a condition of a proper connection* of the image sensing unit to a camera body as claimed. Rather, the description in Ikeda et al. at column 12, lines 25-34, simply assumes that the computer detects a connection of the image sensing unit 100. Thereafter, signal processing controller 164 communicates with the sensing controller 110 through a serial data connection to exchange ID data so that the computer knows which parameters to load into a memory of the controller 164 (see column 12, lines 25-47).

It is noted that in lines 24-33 of column 9 of Ikeda et al. mention a modification using a plurality of terminal pins between connectors 111 and 150 for discriminating CCD information of a connected image sensor. However, even if one

were to consider, for the sake of argument, that this configuration were to suggest a condition of a proper connection, it would not teach the combination of specific features set forth in claim 1.

For instance, the next recited features of claim 1 concerns a power supply controller that operates to determine a selection of controlling power supply in the camera body according to a result of the detected condition. In contrast, power supply to the computer expansion board 140 of Ikeda et al., which the Examiner alleges constitutes a "camera body," appears to be supplied as long as power is supplied to the rest of the computer. (See, column 12, lines 25-27.) The Examiner, in fact, acknowledges that Ikeda fails to disclose the claimed power controller for selectively controlling power in a camera body in accordance with a detected condition of connection. Hence, when considering the whole of claim 1, Ikeda et al. does not teach or suggest the claimed detector for detecting a condition of connection and power supply controller that operates in accordance with the detected result.

The Arai et al. patent fails to remedy to shortcomings of Ikeda et al. pointed out above. First of all, the Arai et al. patent is directed to a very different type of camera from the image sensor and computer of Ikeda et al. In the Arai et al. camera, an image pickup unit including a CCD is located in the "main-body unit CU" (see, column 6, lines 31-34). As such, a mechanical "mounting unit MT" must be employed to align and optically couple the lens unit with the CCD of the camera main body along with establishing electrical connection between the image sensing and lens units. (See, column 6, lines 7-10 and Figure 1.) By contrast, the Ikeda et al. image sensor is connected to an expansion board of a computer by way of a signal line or wireless connection (column 6, lines 10-17). As such, the image sensing unit of Ikeda et al., which includes a CCD *and* lens configuration, is located exterior to the computer. Consequently, the sensing unit of Ikeda et al. does not need a mechanical mounting unit as required in the Arai et al. camera. Moreover, Ikeda et al. is concerned with an identification of a *different CCD* when changing to

another sensing unit (see, for example, column 8, lines 24-41), whereas the camera main-body of Arai et al. always utilizes the same CCD (see, column 6, lines 31-34).

Hence, problems Arai et al. attempts to address using a lens mounting device do not relate to the connection of peripheral type imaging device as described in Ikeda et al. in which a connection is made *to a computer board or card*. It is respectfully submitted, therefore, that one of ordinary skill in the art would not have been led to combine the disparate teachings of these patents to arrive at the claimed invention as proposed in by the Examiner without the benefit of prior knowledge of Applicants' own disclosure. Such application of impermissible hindsight is, of course, impermissible.

Even if one were to consider, *arguendo*, that one of ordinary skill in the art would have been motivated to modify the system of Ikeda et al. to somehow include the mechanical mounting interface of Arai et al., such hypothetical combination would not have taught or suggested each and every feature set forth in claim 1. For instance, with respect detected proper connection, the relied upon description in column 8 of Arai et al. states "the respective portions of the camera main-body unit CU are always powered from the battery 37." Accordingly, a proper connection in Arai et al. does not appear to involve any controller for selectively controlling power supply the camera body, where the selection is determined according to a detected condition of a proper connection as claimed.

Moreover, there is no explicit or implicit description in the Arai et al. patent, within any reasonable interpretation, that would have taught or suggested selectively controlling power supply of a *computer*, such as described in Ikeda et al., which would have met the claimed features of *selectively controlling power supply in the main camera body in accordance with a result of the detection,*" where detection is of *a condition of a proper connection* of said image sensing unit to said camera body.

It is to be noted that the Examiner's statements, at page 2, section 2 of the Action attempt to twist the plain meaning of the term "a proper connection" into

something that it is not. For example, the Examiner states, "a 'proper' connection is interpreted to be whether or not the interchangeable lens is properly attached" (emphasis added). It is respectfully submitted that the meaning of the claimed term "a proper connection" does not imply any determination of whether a connection is proper or improper because such an interpretation would also include the antithesis of the plain meaning proper connection. Furthermore, claim 1 recites, *inter alia*, that the detector operates to detect a *condition* of a proper connection, which plainly means that such detection is of a condition of connection of a correctly connected device. Hence, the Examiner's conclusion, "[w]hen used in conjunction with Ikeda's teaching of detecting whether an image sensing head is connected, it would have been obvious to disable certain parts of the camera if it is detected that the image sensing head is not properly attached," amounts to a *non sequitur* because it is predicated on a factually incorrect premise.

For at least these reasons, the rejection of independent claim 1 is improper and should be withdrawn.

Independent Claim 6

Claim 6 is directed to a digital camera having a connector to which an interface for performing connection to an external device is connectable. The camera includes an image processor for performing a predetermined processing on image data from an image sensing unit having a taking lens and an image sensing device and being connectable to the digital camera via the connector. Claim 6 recites that the camera includes a detector for recognizing an interface type from a condition of connection of said interface to said connector of said digital camera and a power supply controller for controlling power supply in said digital camera in accordance with a result of the detection.

In connection with these claimed features, pages 5-6 of the Office Action essentially repeat the same statements made in conjunction with the rejection of claim 1. As pointed out above, however, it is respectfully submitted that one of

ordinary skill in the art would not have looked to modify the computer/image sensor combination of Ikeda et al. using the mechanical mounting unit of Arai et al. to as suggested in the Office Action.

Additionally, claim 6 recites, *inter alia*, the feature of a detector for *recognizing an interface type* from a *condition of connection* of said interface to said connector of said digital camera. By contrast, neither Ikeda et al. nor Arai et al. discloses or suggests such a feature. For instance, the disclosure from Ikeda et al. cited in the Office Action describes using serial communication to transmit ID data possessed by the image sensing unit 100. This connecting configuration and each of the alternative embodiments described in Ikeda et al. appears to use a same type of interface with any connecting device. Hence, Ikeda et al. does not mention or suggest identifying an *interface type*, much less a detector for recognizing an interface type from a condition of connection as claimed. Arai et al. also is silent with respect to detecting an *interface type* according to a detected condition of connection, as claimed, because Arai et al. describes only one type of "known mounting unit MT in which press contact terminals of the units CU and LU are arranged" (see, column 6, lines 7-10).

Because both Ikeda et al. and Arai et al. fail to teach or suggest recognition of an interface type as claimed, it is respectfully submitted that any combination of these patents would also fail to teach or suggest the claimed combination including this feature.

For at least these reasons, the rejection fails to establish a *prima facie* case of obviousness. Accordingly, independent claim 6 is considered patentable.

Independent Claims 11, 19 and 22

Independent claim 22 sets forth, among other features, a controller for detecting a condition of connection of one of a plurality of detachable devices, which is connected to a camera body, and determines which device is connected based on the detected condition. Claim 21 additionally recites that a power supply controller

operates to control power supply in the camera body in accordance with a result of the detection.

In connection with these claimed features, the Examiner essentially asserts that the Ikeda patent teaches all the claimed features except for "a power supply controller for selectively controlling power supply in the camera body" (see, page 10, lines 19-20). Applicants interpret this statement to mean that Ikeda et al. does not disclose "a power supply controller for controlling power supply in said camera body in accordance with a result of the detection," because this is the language recited in claim 22. The Applicants agree with this interpretation of the Examiner's statement. As stated above, Ikeda et al. is silent with respect to controlling the computer board or card 140, considered by the Examiner to be a "camera body, based on any detected condition of connection, but instead appears to disclose supplying power to the computer board or card as long as the computer is turned on.

The Examiner again asserts that the Arai et al. patent fills the gaps of Ikeda et al. with its alleged disclosure of "an interchangeable lens system that detects a connection condition of the interchangeable lens and based upon the connection condition will control power supply within the camera." However, Arai et al. does not teach a power supply controller for controlling power supply in a camera body in accordance with a detected condition of connection, wherein a determination of which detachable device is connected to a terminal of the camera body is based on the detected condition. Rather, as pointed out on page 11 of the Office Action, Arai et al. discloses detecting whether or not an interchangeable lens is properly attached and disabling parts of the camera to conserve energy when it is determined that an improper connection exists. According to Arai et al., when a proper connection of a detachable lens unit LU is detected by way of a detachable switch 35 in the main camera body CU, a switching circuit 38 is activated to supply a drive power voltage from the battery 37 to each camera portion. (See column 6, line 64 to column 7, line 7.) The detachable switch of Arai et al., however, does not appear to supply any information other than whether it is ON or OFF (i.e., only one of two

binary states). In other words, it does not operate to detect a condition of connection of a detachable device and determine which detachable device is connected to the camera main-body based on the detected condition as claimed.

Furthermore, there is no nexus with respect to any identification provided by way of connectors described in Ikeda et al. and control of power supply as taught in Arai et al., which would have suggested the claimed controller operation. As pointed out above, the description of a mounting unit in the Arai et al. patent does not teach or suggest a detector for determining which device is attached *based on a condition of connection* and controlling power supply in accordance with the detected result. Rather, power is supplied to all respective portions of the camera main-body of Arai et al. when a proper connection is obtained, not matter what type of lens unit is attached to the mounting unit. Conversely, it would appear that any identification operation provided by Ikeda et al. would require that a proper connection exist between the computer and image sensor.

Hence, even if one were to consider, for the sake of argument, that one of ordinary skill in the art would have been motivated to combine these documents as suggested by the Examiner, such combination would not appear to teach the detector and controller operation as claimed because:

1) a detected improper connection as taught in Arai et al. suggests that the identification processes of Ikeda et al. could not be successfully carried out, and
2) a detected proper connection always causes the respective portions of the camera to be powered from the battery.

Hence, the claimed combination of features would not be present in either of the ON or OFF detected states of the switch 38, which respectively correspond to mutually exclusive states of proper and improper connection in Arai et al. Therefore, the Arai et al. and Ikeda et al. patents would not have taught or suggested the combination of all claimed features when interpreting, as a whole, the combination of features set forth in claim 22 (see, MPEP § 2141), namely, the claimed features of a control of

power supply in accordance with the detected result, which result includes a determination of which device is connected to the camera. For at least these reasons, claim 22 is considered patentable.

Additionally, because the teachings of the prior art fail to provide evidence to substantiate a teaching or suggestion of each and every claimed feature, and the problems addressed by the applied patents involve very different devices, it is respectfully submitted that the Examiner's conclusion of obviousness stated on page 11 of the Action could only have been reached as a result of his knowledge of Applicants' own application. However, as instructed by MPEP § 2141, such hindsight reasoning cannot be used as a basis for establishing a *prima facie* case. Also see, *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed.Cir.1991).

Similar distinctions are brought out in each of independent claims 11 and 19, which have been amended to explicitly recite that identifying a connected device is based on the detected condition of connection. Support for these amendments is found throughout the disclosure, for example, in the exemplary cameras and attendant methods described on pages 29-35 of the specification and in Figures 21-22. For instance, claim 11 recites a combination of features including a detector for detecting a condition of connection of an external device when connected to the connection device and *identifying a connected external device based on a detected condition of connection of the external device* and a power supply controller for controlling power supply to said digital camera *in accordance with a result of the detection*. Claim 19 recites, *inter alia*, a step of detecting a condition of connection of a detachable device connected to a connector of a digital camera and *identifying the type of connected device based on a detected condition of connection* and controlling power supply in said digital camera *in accordance with a result of the detection*. It is respectfully submitted that claims 11 and 19 are allowable over Ikeda et al. and Arai et al. using a rational similar that applied above with respect to claim 22.

Based on the foregoing, the rejection fails to establish a *prima facie* case of obviousness. As such, independent claims 11, 19 and 22 are considered allowable.

Claims 5, 7-10, 12-14, 18, 20, 21 and 27

Claims 5, 7-10, 12-14, 18, 20, 21 and 27 depend from one of independent claims 1, 6, 11, 19 and 22, and are therefore allowable at least by virtue of their dependence from an allowable independent claim. In addition, these claims recite combinations including additional features, thus setting forth further distinctions from the Ikeda et al. and Arai et al. patents.

Kido and Yamamoto

The Office Action also includes rejections under 35 U.S.C. § 103 of claims 2, 3, 15, 16, 24 and 25, as allegedly being unpatentable over Ikeda in view of Arai et al. and further in view of the Kido document, and of claim 28, as allegedly being obvious over Ikeda et al., Arai et al. and Yamamoto patents. Applicants respectfully traverse these rejections.

With respect to claims 2, 3, 15, 16, 24 and 25, these claims depend from one of independent claims 1, 11 and 22, each of which recites subject matter not taught or suggested in the proposed combination of the Ikeda et al. and Arai et al. patents for the above reasons. It is respectfully submitted that the cited disclosure in Kido of providing a flash control circuit in the body of a camera does not teach or suggest the missing claimed features pointed out above with respect to the independent claims. Hence, dependent claims 2, 3, 15, 16, 24 and 25 are considered allowable.

With respect to claim 28, it is respectfully submitted that the cited disclosure in Yamamoto of replacing an interchangeable lens with a personal computer interface does not make up for the shortcomings of the Ikeda et al. and Arai et al. patents pointed out above with respect to independent claim 22. Furthermore, Yamamoto does not appear to teach or suggest connecting a personal computer to

a computer board or card, as would be present in the Ikeda et al. computer. Hence, claim 28 recites further points of distinction with respect to the applied documents.

The Suemoto et al. and Juen Patents

The Office Action also includes a rejection of claim 30 under 35 U.S.C. § 103 as allegedly being unpatentable over Suemoto et al. (U.S. Patent No. 5,844,606) in view of Juen (U.S. Patent Application Publication No. US 2002/0054233). Insofar as the Office may consider the rejection to apply to amended claim 30, this rejection is respectfully traversed, as the Suemoto et al. and Juen documents fail to teach or suggest all claim limitations.

For example, amended claim 30 recites, among other things, that a digital camera includes an a detector for recognizing an interface type from a condition of connection of the interface to said digital camera, and a power supply controller for controlling power supply in the digital camera in accordance with a result of the detection. Claim 30 further recites that the power supply controller includes control logic for selectively supplying power to at least one power source portion of the camera and not to other power source portions of the camera, the selection being based on a type of interface recognized by the detector and *automatically performed in response to the detection of a condition of connection*. It is respectfully submitted that neither Suemoto et al. nor Juen, either alone or in combination, disclose or suggest these features.

In the statements of the rejection, the Examiner essentially asserts that the Suemoto et al. patent discloses all the claimed features except for "that the camera includes a power supply controller for supplying power based upon the recognition of the interface type." The Examiner, therefore, applies the Juen publication, which describes supplying power to various functional portions of a camera based on whether a window relating to the functional portion, which is displayed on a display, is selected to be open or closed. (See, e.g., the abstract.) However, it is respectfully submitted that Juen does not teach the controller as presently recited,

which includes, *inter alia*, control logic that selectively supplies power based on a type of interface recognized by the detector and that the selection is *automatically performed in response to a detection of a condition of connection*. In contrast, the camera described in the Juen publication requires a user to select a certain window icon displayed on a touch display panel before a power source controller is notified. (See, paragraphs 0040-0042.) Therefore, even if one were to consider a modification of Suemoto et al. to include the touch screen including selectable icons as taught in Juen et al., such modification would not have taught or suggested the concept of automatically performing selective power supply as recited in the context of claim 30.

From the above, it is clear that Suemoto et al. and Juen cannot be combined to reach the claimed invention. Accordingly, claim 30 is considered allowable over these documents.

Conclusion

In view of the foregoing amendments and remarks, the application is believed to be in condition for allowance, and prompt notice of the same is earnestly solicited.

Respectfully submitted,
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Date: April 21, 2005

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